

Solve each system using elimination:

$$\begin{array}{l} 1) \begin{cases} 3x+5y=4 \\ 5x+7y=6 \end{cases} \quad \left(\frac{1}{2}, \frac{1}{2}\right) \\ \begin{array}{r} 3x+5y=4 \\ -5x-7y=6 \\ \hline 8x+12y=-2 \\ 2x+3y=-\frac{1}{2} \\ 4x+6y=-1 \\ 6x+9y=-\frac{3}{2} \\ 6x+5y=3 \\ \hline 4y=-\frac{5}{2} \\ y=-\frac{5}{8} \\ 3x+5(-\frac{5}{8})=4 \\ 3x-\frac{25}{8}=4 \\ 3x=\frac{57}{8} \\ x=\frac{19}{8} \end{array} \\ 2) \begin{cases} 2x-7y=-1 \\ 6x-21y=-3 \end{cases} \\ \begin{array}{r} 2x-7y=-1 \\ -6x+21y=3 \\ \hline 0=0 \end{array} \end{array}$$

TRUE
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Use the graphing method to solve.

$$1) \begin{cases} 2x-y=-1 \\ 3x+y=6 \end{cases} \quad y=-3x+6$$

Use the substitution method

$$2) \begin{cases} x+2y=7 \\ 2x-y=4 \end{cases} \quad x=-2y+7$$

$$\begin{array}{r} x+2y=7 \\ 2(-2y+7)-y=4 \\ -4y+14-y=4 \\ -5y=-10 \\ y=2 \\ x=-2(2)+7 \\ x=3 \end{array}$$

Use the elimination method to solve the system. Show all work.

$$3) \begin{cases} 4a-5b=10 \\ 2a-5b=0 \end{cases} \quad \begin{array}{r} 4a-5b=10 \\ -2a+5b=0 \\ \hline 6a-10b=10 \\ 3a-5b=5 \\ 6a-10b=10 \\ -3a+5b=-5 \\ \hline 3a-5b=-5 \\ 4a-5b=2 \end{array}$$

$$4) \begin{cases} 2b=2a+b-4 \\ 3a=3b-a+2 \end{cases} \quad \begin{array}{r} 2b=2a+b-4 \\ -b=2a-4 \\ b=-2a+4 \\ 3a=3(-2a+4)-a+2 \\ 3a=-6a+12-a+2 \\ 4a=-10 \\ a=-\frac{5}{2} \\ 2b=2(-\frac{5}{2})+b-4 \\ 2b=-5+b-4 \\ b=-9 \end{array}$$

$$3) \begin{cases} 4a-5b=10 \\ 2a-5b=0 \end{cases} \quad \begin{array}{r} 4a-5b=10 \\ -4a+10b=0 \\ \hline 5b=10 \\ b=2 \\ 4a-5(2)=10 \\ 4a-10=10 \\ 4a=20 \\ a=5 \end{array}$$

(5, 2)

$$5) \begin{cases} 2m+3n=6 \\ m+2n=10 \end{cases} \quad \begin{array}{r} 2m+3n=6 \\ -2m-4n=-20 \\ \hline -n=-14 \\ n=14 \\ m+2(14)=10 \\ m+28=10 \\ m=-18 \end{array}$$

$$6) \begin{cases} 2x-y=8 \\ x-8y=4 \end{cases} \quad \begin{array}{r} 2x-y=8 \\ -2x+16y=-8 \\ \hline 15y=0 \\ y=0 \\ 2x-0=8 \\ 2x=8 \\ x=4 \end{array}$$

$$7) \begin{cases} 3x+y=6 \\ 2x-y=-1 \end{cases} \quad \begin{array}{r} 3x+y=6 \\ 2x-y=-1 \\ \hline 5x=5 \\ x=1 \\ 2(1)-y=-1 \\ 2-y=-1 \\ -y=-3 \\ y=3 \end{array}$$

$$8) \begin{cases} 5p+12q=13 \\ 3p+4q=3 \end{cases} \quad \begin{array}{r} 5p+12q=13 \\ -3p-4q=3 \\ \hline 8p+16q=10 \\ 4p+8q=5 \\ 8p+16q=10 \\ -4p-8q=5 \\ \hline 4p+8q=-5 \\ 4p+8q=5 \\ \hline 0=0 \end{array}$$

Choose your method to solve.

$$9) \begin{cases} x-3y=-5 \\ 2x-5y=-9 \end{cases} \quad \begin{array}{r} x-3y=-5 \\ -2x+6y=10 \\ \hline 2x-5y=-9 \\ -2x+6y=10 \\ \hline y=1 \\ x-3(1)=-5 \\ x-3=-5 \\ x=-2 \end{array}$$

$$10) \begin{cases} 2x-y=2 \\ x=\frac{2}{3}y \end{cases} \quad \begin{array}{r} 2x-y=2 \\ 2(\frac{2}{3}y)-y=2 \\ \frac{4}{3}y-y=2 \\ \frac{1}{3}y=2 \\ y=6 \\ x=\frac{2}{3}(6) \\ x=4 \end{array}$$